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     Arg Pro Gly Trp Val Glu Val Phe Ile Arg Ala Leu Gln Ile Cys Glu
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                      20                  25                  30

  45  Cys Leu Thr Ala Arg Asp Gln Asp Arg Leu Arg Ala Thr Cys Thr Leu
                  35                  40                  45


      Ser Gly Asn Arg Asp Thr Leu Trp His Leu Phe Asn Thr Leu Gln Arg
  50      50                  55                  60


      Arg Pro Gly Trp Val Glu Tyr Phe Ile Ala Ala Leu Arg Gly Cys Glu
      65                  70                  75                  80
  55

      Leu Val Asp Leu Ala Asp Glu Val Ala Ser Val Tyr Glu Ser Tyr Gln
                      85                  90                  95


  60
      Pro Arg Thr Ser Asp Arg Pro Pro Asp Pro Leu Glu Pro Pro Ser Leu
                      100                 105                 110
```

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 10       Gln Glu Thr Gln Ala Pro Glu Ser Pro Gly Glu Asn Ser Glu Gln Ala
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          Leu Gln Thr Leu Ser Pro Arg Ala Ile Pro Arg Asn Pro Asp Gly Gly
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          Pro Leu Glu Ser Ser Ser Asp Leu Ala Ala Leu Ser Pro Leu Thr Ser
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                      195             200             205
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          Ser Ser Pro Gly Leu Ala Ser Ala Gly Ala Ala Glu Gly Lys Gln Gly
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          Ala Glu Ser Asp Gln Ala Glu Pro Ile Ile Cys Ser Ser Gly Ala Glu
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          Thr Val Pro Ser Lys Leu Pro Thr Ser Ser Lys Pro Pro Gly Ala Val
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          Pro Ser Asn Ala Leu Thr Asn Pro Ala Pro Ser Lys Leu Pro Ile Asn
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15  Glu Leu Ser Lys Pro Gly Val Leu Ala Ser Gln Val Asp Ser Pro Phe
                420             425             430

    Ser Gly Cys Phe Glu Asp Leu Ala Ile Ser Ala Ser Thr Ser Leu Gly
20          435             440             445

    Met Gly Pro Cys His Gly Pro Glu Glu Asn Glu Tyr Lys Ser Glu Gly
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    Thr Phe Gly Ile His Val Ala Glu Asn Pro Ser Ile Gln Leu Leu Glu
    465             470             475             480

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                485             490             495

35  Ala Asp Arg Lys Phe Gln Glu Arg Glu Val Pro Cys His Arg Pro Ser
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    Pro Gly Ala Leu Trp Leu Gln Val Ala Val Thr Gly Val Leu Val Val
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tctgcagcac aggcagccta ggcctgcgtc ccaacctgcc tctcaccagc tctgtgacct   2820
tgggcaaggg atttatctgt ctgtccctta gttttctcac ctgtaaaagg aggataagta   2880
tatatatata tttcccagtg ttgtgaagat taaaggagtt tatcgatgta ggtcttagga   2940
tgagtcctgg catttaccaa gggttggata tatgttatta tcactattaa gtgttgaggg   3000
tccaggcatg ctgggcaaca gggacccat ctctacaaaa aagtttaaaa aattagccag   3060
gcgtggtggt gcacctgtcg tcttagctac ttgggaggct gaggtgggag gatcacttga   3120
gcccagaagc ttgaagctgc agtgagctag gatcgtgcca ctgcactcca acctgggtga   3180
gagagcgaga ccctgtctca agaaaaagaa aaatgcagag aaacaggagt cttggctact   3240
cctttagagg cagactcaga ccctcctgcc tcacagcttt atctttgtat ttgccccttа   3300
ctttatcttg tgccttgaga aattgctggg gagagaggta tgtccactgg gcagctgtac   3360
aggatggagg atataggcg tttccactcc cagcagccag gttccctcac cccaagctca   3420
cccactgttg gggagattat ctacaataac accagaaaca cattggggtg gattgggggt   3480
atccttatgg gttctttca gggaaccatt gctggacaag gcacaggagc cacctccatt   3540
tctgagctct gcaagggaca agaactagag ccatcagggg ctgggctcac tgtggcccca   3600
ccccaagccg tcagcctcca gggatctaca ccctgccttg gctgctacag ctttttcact   3660
ccactgccct aggggagttc agcaacctaa tgatctctat ctctgaacat ctcttcatcc   3720
catgctccaa gtccagcaac ctgcaccctg gaaccaggag tggaccctac ccgagctgtc   3780
tgtattaatc cccatccccc accaccaatc ttaaaaagcc ctctgtcccc ctaccctaaa   3840
ccccagttag gtacccatgc tgggcaggtc agttaacaat ttatgcacag gtactagttt   3900
tattgtatta ccgttccagg gtagctttga aaaaagtatc tcaaaaaggc aacatgggcc   3960
```

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```
gagcgcagtg gctcacgcct gtaatcccag cactttggga ggccaaggtg ggcagatcgc   4020

ctgaggtctg gagttcaaga ccagcctggc caacagggtg aaaccccgtc tctacaaaaa   4080

taagaaaatt agccaggtgt agtggcagac gtctgtaatc ccagctattc aggaggctga   4140

ggcacgagaa ttccatgaac ccaggatgcg gaggttgcag tgagccgaga ttgtgccact   4200

gcgctccagc ctgggcgaca gagtggtatt ctgtttc                            4237
```

<210>   6

<211>   540

<212>   PRT

<213>   Homo sapiens

<400>   6

Met Pro Phe Ala Glu Asp Lys Thr Tyr Lys Tyr Ile Cys Arg Asn Phe
1   5   10   15

Ser Asn Phe Cys Asn Val Asp Val Val Glu Ile Leu Pro Tyr Leu Pro
            20   25   30

Cys Leu Thr Ala Arg Asp Gln Asp Arg Leu Arg Ala Thr Cys Thr Leu
        35   40   45

Ser Gly Asn Arg Asp Thr Leu Trp His Leu Phe Asn Thr Leu Gln Arg
    50   55   60

Arg Pro Gly Trp Val Glu Tyr Phe Ile Ala Ala Leu Arg Gly Cys Glu
65   70   75   80

Leu Val Asp Leu Ala Asp Glu Val Ala Ser Val Tyr Gln Ser Tyr Gln
                85   90   95

Pro Arg Thr Ser Asp Arg Pro Pro Asp Pro Leu Glu Pro Pro Ser Leu
            100   105   110

Pro Ala Glu Arg Pro Gly Pro Pro Thr Pro Ala Ala Ala His Ser Ile
            115   120   125

Pro Tyr Asn Ser Cys Arg Glu Lys Glu Pro Ser Tyr Pro Met Pro Val
        130   135   140

Gln Glu Thr Gln Ala Pro Glu Ser Pro Gly Glu Asn Ser Glu Gln Ala
145   150   155   160
```

```
        Leu Gln Thr Leu Ser Pro Arg Ala Ile Pro Arg Asn Pro Asp Gly Gly
                        165                 170             175


  5     Pro Leu Glu Ser Ser Ser Asp Leu Ala Ala Leu Ser Pro Leu Thr Ser
                        180             185             190


 10     Ser Gly His Gln Glu Gln Asp Thr Glu Leu Gly Ser Thr His Thr Ala
                    195             200             205


        Gly Ala Thr Ser Ser Leu Thr Pro Ser Arg Gly Pro Val Ser Pro Ser
 15         210             215             220


        Val Ser Phe Gln Pro Leu Ala Arg Ser Thr Pro Arg Ala Ser Arg Leu
        225             230             235             240
 20

        Pro Gly Pro Thr Gly Ser Val Val Ser Thr Gly Thr Ser Phe Ser Ser
                        245             250             255


 25     Ser Ser Pro Gly Leu Ala Ser Ala Gly Ala Ala Glu Gly Lys Gln Gly
                        260             265             270


 30     Ala Glu Ser Asp Gln Ala Glu Pro Ile Ile Cys Ser Ser Gly Ala Glu
                    275             280             285


        Ala Pro Ala Asn Ser Leu Pro Ser Lys Val Pro Thr Thr Leu Met Pro
            290             295             300
 35

        Val Asn Thr Val Ala Leu Lys Val Pro Ala Asn Pro Ala Ser Val Ser
        305             310             315             320
 40

        Thr Val Pro Ser Lys Leu Pro Thr Ser Ser Lys Pro Pro Gly Ala Val
                        325             330             335


 45     Pro Ser Asn Ala Leu Thr Asn Pro Ala Pro Ser Lys Leu Pro Ile Asn
                    340             345             350


 50     Ser Thr Arg Ala Gly Met Val Pro Ser Lys Val Pro Thr Ser Met Val
                    355             360             365


        Leu Thr Lys Val Ser Ala Ser Thr Val Pro Thr Asp Gly Ser Ser Arg
            370             375             380
 55

        Asn Glu Glu Thr Pro Ala Ala Pro Thr Pro Ala Gly Ala Thr Gly Gly
        385             390             395             400
 60

        Ser Ser Ala Trp Leu Asp Ser Ser Ser Glu Asn Arg Gly Leu Gly Ser
                        405             410             415
```

```
       Glu Leu Ser Lys Pro Gly Val Leu Ala Ser Gln Val Asp Ser Pro Phe
                   420             425             430

  5
       Ser Gly Cys Phe Glu Asp Leu Ala Ile Ser Ala Ser Thr Ser Leu Gly
                   435             440             445

 10    Met Gly Pro Cys His Gly Pro Glu Glu Asn Glu Tyr Lys Ser Glu Gly
           450             455             460

       Thr Phe Gly Ile His Val Ala Glu Asn Pro Ser Ile Gln Leu Leu Glu
 15    465             470             475             480

       Gly Asn Pro Gly Pro Pro Ala Asp Pro Asp Gly Gly Pro Arg Pro Gln
                   485             490             495
 20
       Ala Asp Arg Lys Phe Gln Glu Arg Glu Val Pro Cys His Arg Pro Ser
                   500             505             510
 25
       Pro Gly Ala Leu Trp Leu Gln Val Ala Val Thr Gly Val Leu Val Val
                   515             520             525

 30    Thr Leu Leu Val Val Leu Tyr Arg Arg Arg Leu His
                   530             535             540


       <210>  7
 35
       <211>  508

       <212>  PRT
 40    <213>  artificial sequence


       <220>
 45
       <223>  fragment

       <400>  7

 50    Met Pro Phe Ala Glu Asp Lys Thr Tyr Lys Tyr Ile Cys Arg Asn Phe
       1               5               10              15

       Ser Asn Phe Cys Asn Val Asp Val Val Glu Ile Leu Pro Tyr Leu Pro
 55                20              25              30

       Cys Leu Thr Ala Arg Asp Gln Asp Arg Leu Arg Ala Thr Cys Thr Leu
                   35              40              45
 60
       Ser Gly Asn Arg Asp Thr Leu Trp His Leu Phe Asn Thr Leu Gln Arg
                   50              55              60
```

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Arg Pro Gly Trp Val Glu Tyr Phe Ile Ala Ala Leu Arg Gly Cys Glu
65   70   75   80

5

Leu Val Asp Leu Ala Asp Glu Val Ala Ser Val Tyr Glu Ser Tyr Gln
            85   90   95

10

Pro Arg Thr Ser Asp Arg Pro Asp Pro Leu Glu Pro Pro Ser Leu
            100   105   110

15 Pro Ala Glu Arg Pro Gly Pro Pro Thr Pro Ala Ala Ala His Ser Ile
            115   120   125

Pro Tyr Asn Ser Cys Arg Glu Lys Glu Pro Ser Tyr Pro Met Pro Val
20   130   135   140

Gln Glu Thr Gln Ala Pro Glu Ser Pro Gly Glu Asn Ser Glu Gln Ala
145   150   155   160

25

Leu Gln Thr Leu Ser Pro Arg Ala Ile Pro Arg Asn Pro Asp Gly Gly
            165   170   175

30

Pro Leu Glu Ser Ser Ser Asp Leu Ala Ala Leu Ser Pro Leu Thr Ser
            180   185   190

35 Ser Gly His Gln Glu Lys Asp Thr Glu Leu Gly Ser Thr His Thr Ala
            195   200   205

Gly Ala Thr Ser Ser Leu Thr Pro Ser Arg Gly Pro Val Ser Pro Ser
40   210   215   220

Val Ser Phe Gln Pro Leu Ala Arg Ser Thr Pro Arg Ala Ser Arg Leu
225   230   235   240

45

Pro Gly Pro Thr Gly Ser Val Val Ser Thr Gly Thr Ser Phe Ser Ser
            245   250   255

50

Ser Ser Pro Gly Leu Ala Ser Ala Gly Ala Ala Glu Gly Lys Gln Gly
            260   265   270

55 Ala Glu Ser Asp Gln Ala Pro Ile Ile Cys Ser Ser Gly Ala Glu Ala
            275   280   285

Pro Ala Asn Ser Leu Pro Ser Lys Val Pro Thr Thr Leu Met Pro Val
60   290   295   300

Asn Thr Val Ala Leu Lys Val Pro Ala Asn Pro Ala Ser Val Ser Thr

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```
       305                 310                 315                 320

  5    Val Pro Ser Lys Leu Pro Thr Ser Ser Lys Pro Pro Gly Ala Val Pro
                     325             330                 335

       Asn Ala Leu Thr Asn Pro Ala Pro Ser Lys Leu Pro Ile Asn Ser Thr
 10                  340             345                 350

       Arg Ala Gly Met Val Pro Ser Lys Val Pro Thr Ser Met Val Leu Thr
                 355             360                 365
 15
       Lys Val Ser Ala Ser Thr Val Pro Thr Asp Gly Ser Ser Arg Asn Glu
               370             375             380

 20    Glu Thr Pro Ala Ala Pro Thr Pro Ala Gly Ala Thr Gly Gly Ser Ser
       385                 390                 395                 400

       Ala Trp Leu Asp Ser Ser Phe Glu Asn Arg Gly Leu Gly Ser Glu Leu
 25                  405             410                 415

       Ser Lys Pro Gly Val Leu Ala Ser Gln Val Asp Ser Pro Phe Ser Gly
                 420             425             430
 30
       Cys Phe Glu Asp Leu Ala Ile Ser Ala Ser Thr Ser Leu Gly Met Gly
               435             440             445
 35
       Pro Cys His Gly Pro Glu Glu Asn Glu Tyr Lys Ser Glu Gly Thr Phe
               450             455             460

 40    Gly Ile His Val Ala Glu Asn Pro Ser Ile Gln Leu Leu Glu Gly Asn
       465                 470             475                 480

       Pro Gly Pro Pro Ala Asp Pro Asp Gly Gly Pro Arg Pro Gln Ala Asp
 45                  485             490                 495

       Arg Lys Phe Gln Glu Arg Glu Val Pro Cys His Arg
                   500             505
 50
       <210>  8

       <211>  239
 55
       <212>  PRT

       <213>  artificial sequence

 60

       <220>
```

- 17 -

<223> Fragment

<400>   8

5   Met Pro Phe Ala Glu Asp Lys Thr Tyr Lys Tyr Ile Cys Arg Asn Phe
    1   5   10   15

    Ser Asn Phe Cys Asn Val Asp Val Val Glu Ile Leu Pro Tyr Leu Pro
10   20   25   30

    Cys Leu Thr Ala Arg Asp Gln Asp Arg Leu Arg Ala Thr Cys Thr Leu
                35   40   45
15

    Ser Gly Asn Arg Asp Thr Leu Trp His Leu Phe Asn Thr Leu Gln Arg
            50   55   60

20
    Arg Pro Gly Trp Val Glu Tyr Phe Ile Ala Ala Leu Arg Gly Cys Glu
    65   70   75   80

25 Leu Val Asp Leu Ala Asp Glu Val Ala Ser Val Tyr Glu Ser Tyr Gln
                85   90   95

    Pro Arg Thr Ser Asp Arg Pro Pro Asp Pro Leu Glu Pro Pro Ser Leu
30   100   105   110

    Pro Ala Glu Arg Pro Gly Pro Pro Thr Pro Ala Ala Ala His Ser Ile
            115   120   125
35

    Pro Tyr Asn Ser Cys Arg Glu Lys Glu Pro Ser Tyr Pro Met Pro Val
        130   135   140

40
    Gln Glu Thr Gln Ala Pro Glu Ser Pro Gly Glu Asn Ser Glu Gln Ala
    145   150   155   160

45 Leu Gln Thr Leu Ser Pro Arg Ala Ile Pro Arg Asn Pro Asp Gly Gly
                165   170   175

    Pro Leu Glu Ser Ser Ser Asp Leu Ala Ala Leu Ser Pro Leu Thr Ser
50   180   185   190

    Ser Gly His Gln Glu Lys Asp Thr Glu Leu Gly Ser Thr His Thr Ala
                195   200   205
55

    Gly Ala Thr Ser Ser Leu Thr Pro Ser Arg Gly Pro Val Ser Pro Ser
        210   215   220

60
    Val Ser Phe Gln Pro Leu Ala Arg Ser Thr Pro Arg Ala Ser Arg
    225   230   235

```
<210>   9

<211>   236

<212>   PRT

<213>   artificial sequence


<220>

<223>   Fragment

<400>   9

Met Pro Phe Ala Glu Asp Lys Thr Tyr Lys Tyr Ile Cys Arg Asn Phe
1               5                   10                  15

Ser Asn Phe Cys Asn Val Asp Val Val Glu Ile Leu Pro Tyr Leu Pro
            20                  25                  30

Cys Leu Thr Ala Arg Asp Gln Asp Arg Leu Arg Ala Thr Cys Thr Leu
        35                  40                  45

Ser Gly Asn Arg Asp Thr Leu Trp His Leu Phe Asn Thr Leu Gln Arg
        50                  55                  60

Arg Pro Gly Trp Val Glu Tyr Phe Ile Ala Ala Leu Arg Gly Cys Glu
65                  70                  75                  80

Leu Val Asp Leu Ala Asp Glu Val Ala Ser Val Tyr Glu Ser Tyr Gln
                85                  90                  95

Pro Arg Thr Ser Asp Arg Pro Pro Asp Pro Leu Glu Pro Pro Ser Leu
            100                 105                 110

Pro Ala Glu Arg Pro Gly Pro Pro Thr Pro Ala Ala Ala His Ser Ile
            115                 120                 125

Pro Tyr Asn Ser Cys Arg Glu Lys Glu Pro Ser Tyr Pro Met Pro Val
        130                 135                 140

Gln Glu Thr Gln Ala Pro Glu Ser Pro Gly Glu Asn Ser Glu Gln Ala
145                 150                 155                 160

Leu Gln Thr Leu Ser Pro Arg Ala Ile Pro Arg Asn Pro Asp Gly Gly
                165                 170                 175

Pro Leu Glu Ser Ser Ser Asp Leu Ala Ala Leu Ser Pro Leu Thr Ser
            180                 185                 190
```

```
        Ser Gly His Gln Glu Lys Asp Thr Glu Leu Gly Ser Thr His Thr Ala
            195          .          200              205

        Gly Ala Thr Ser Ser Leu Thr Pro Ser Arg Gly Pro Val Ser Pro Ser
            210              215              220

        Val Ser Phe Gln Pro Leu Ala Arg Ser Thr Pro Arg
        225              230              235


<210>   10

<211>   232

<212>   PRT

<213>   artificial sequence


<220>

<223>   Fragment

<400>   10

        Met Pro Phe Ala Glu Asp Lys Thr Tyr Lys Tyr Ile Cys Arg Asn Phe
        1              5              10              15

        Ser Asn Phe Cys Asn Val Asp Val Val Glu Ile Leu Pro Tyr Leu Pro
                    20              25              30

        Cys Leu Thr Ala Arg Asp Gln Asp Arg Leu Arg Ala Thr Cys Thr Leu
                35              40              45

        Ser Gly Asn Arg Asp Thr Leu Trp His Leu Phe Asn Thr Leu Gln Arg
            50              55              60

        Arg Pro Gly Trp Val Glu Tyr Phe Ile Ala Ala Leu Arg Gly Cys Glu
        65              70              75              80

        Leu Val Asp Leu Ala Asp Glu Val Ala Ser Val Tyr Glu Ser Tyr Gln
                        85              90              95

        Pro Arg Thr Ser Asp Arg Pro Pro Asp Pro Leu Glu Pro Pro Ser Leu
                    100              105              110

        Pro Ala Glu Arg Pro Gly Pro Pro Thr Pro Ala Ala Ala His Ser Ile
                    115              120              125

        Pro Tyr Asn Ser Cys Arg Glu Lys Glu Pro Ser Tyr Pro Met Pro Val
```

- 20 -

```
                  130                      135                     140


   5    Gln Glu Thr Gln Ala Pro Glu Ser Pro Gly Glu Asn Ser Glu Gln Ala
        145             150             155                 160


        Leu Gln Thr Leu Ser Pro Arg Ala Ile Pro Arg Asn Pro Asp Gly Gly
  10                    165                 170             175


        Pro Leu Glu Ser Ser Ser Asp Leu Ala Ala Leu Ser Pro Leu Thr Ser
                    180             185             190

  15
        Ser Gly His Gln Glu Lys Asp Thr Glu Leu Gly Ser Thr His Thr Ala
                195             200             205


  20    Gly Ala Thr Ser Ser Leu Thr Pro Ser Arg Gly Pro Val Ser Pro Ser
            210             215             220


        Val Ser Phe Gln Pro Leu Ala Arg
  25    225             230


        <210>   11

  30    <211>   171

        <212>   PRT

        <213>   artificial sequence
  35


        <220>

  40    <223>   Fragment

        <400>   11

        Met Pro Phe Ala Glu Asp Lys Thr Tyr Lys Tyr Ile Cys Arg Asn Phe
  45    1               5                   10                  15


        Ser Asn Phe Cys Asn Val Asp Val Val Glu Ile Leu Pro Tyr Leu Pro
                    20              25              ·30
  50


        Cys Leu Thr Ala Arg Asp Gln Asp Arg Leu Arg Ala Thr Cys Thr Leu
                    35              40              45

  55
        Ser Gly Asn Arg Asp Thr Leu Trp His Leu Phe Asn Thr Leu Gln Arg
                50              55              60


  60    Arg Pro Gly Trp Val Glu Tyr Phe Ile Ala Ala Leu Arg Gly Cys Glu
            65              70              75                  80
```

```
        Leu Val Asp Leu Ala Asp Glu Val Ala Ser Val Tyr Glu Ser Tyr Gln
                        85              90              95
```

```
  5     Pro Arg Thr Ser Asp Arg Pro Pro Asp Pro Leu Glu Pro Pro Ser Leu
                    100             105             110
```

```
        Pro Ala Glu Arg Pro Gly Pro Pro Thr Pro Ala Ala Ala His Ser Ile
 10             115             120             125
```

```
        Pro Tyr Asn Ser Cys Arg Glu Lys Glu Pro Ser Tyr Pro Met Pro Val
              130             135             140
 15
```

```
        Gln Glu Thr Gln Ala Pro Glu Ser Pro Gly Glu Asn Ser Glu Gln Ala
        145             150             155             160
 20
```

```
        Leu Gln Thr Leu Ser Pro Arg Ala Ile Pro Arg
                        165             170
```

 25   <210>   12

        <211>   167

        <212>   PRT
 30
        <213>   artificial sequence

 35   <220>

        <223> Fragment

        <400>   12
 40
        Met Pro Phe Ala Glu Asp Lys Thr Tyr Lys Tyr Ile Cys Arg Asn Phe
        1   5   10   15
```

```
 45     Ser Asn Phe Cys Asn Val Asp Val Val Glu Ile Leu Pro Tyr Leu Pro
                        20              25              30
```

```
        Cys Leu Thr Ala Arg Asp Gln Asp Arg Leu Arg Ala Thr Cys Thr Leu
 50             35              40              45
```

```
        Ser Gly Asn Arg Asp Thr Leu Trp His Leu Phe Asn Thr Leu Gln Arg
              50              55              60
 55
```

```
        Arg Pro Gly Trp Val Glu Tyr Phe Ile Ala Ala Leu Arg Gly Cys Glu
        65              70              75              80
 60
```

```
        Leu Val Asp Leu Ala Asp Glu Val Ala Ser Val Tyr Glu Ser Tyr Gln
                        85              90              95
```

```
        Pro Arg Thr Ser Asp Arg Pro Pro Asp Pro Leu Glu Pro Pro Ser Leu
                    100                     105                 110

        Pro Ala Glu Arg Pro Gly Pro Pro Thr Pro Ala Ala Ala His Ser Ile
                    115                     120                 125

        Pro Tyr Asn Ser Cys Arg Glu Lys Glu Pro Ser Tyr Pro Met Pro Val
                    130                     135                 140

        Gln Glu Thr Gln Ala Pro Glu Ser Pro Gly Glu Asn Ser Glu Gln Ala
        145                     150                 155                 160

        Leu Gln Thr Leu Ser Pro Arg
                            165
```

```
<210>   13

<211>   341

<212>   PRT

<213>   artificial sequence


<220>

<223>   Fragment

<400>   13

        Ala Ile Pro Arg Asn Pro Asp Gly Gly Pro Leu Glu Ser Ser Ser Asp
        1                   5                   10                  15

        Leu Ala Ala Leu Ser Pro Leu Thr Ser Ser Gly His Gln Glu Lys Asp
                    20                      25                  30

        Thr Glu Leu Gly Ser Thr His Thr Ala Gly Ala Thr Ser Ser Leu Thr
                    35                      40                  45

        Pro Ser Arg Gly Pro Val Ser Pro Ser Val Ser Phe Gln Pro Leu Ala
                    50                      55                  60

        Arg Ser Thr Pro Arg Ala Ser Arg Leu Pro Gly Pro Thr Gly Ser Val
        65                      70                  75                  80

        Val Ser Thr Gly Thr Ser Phe Ser Ser Ser Ser Pro Gly Leu Ala Ser
                        85                  90                  95

        Ala Gly Ala Ala Glu Gly Lys Gln Gly Ala Glu Ser Asp Gln Ala Pro
                    100                     105                 110
```

```
       Ile Ile Cys Ser Ser Gly Ala Glu Ala Pro Ala Asn Ser Leu Pro Ser
               115             120             125
 5

       Lys Val Pro Thr Thr Leu Met Pro Val Asn Thr Val Ala Leu Lys Val
               130             135             140
10

       Pro Ala Asn Pro Ala Ser Val Ser Thr Val Pro Ser Lys Leu Pro Thr
       145             150             155             160

15     Ser Ser Lys Pro Pro Gly Ala Val Pro Asn Ala Leu Thr Asn Pro Ala
                       165             170             175

       Pro Ser Lys Leu Pro Ile Asn Ser Thr Arg Ala Gly Met Val Pro Ser
20                 180             185             190

       Lys Val Pro Thr Ser Met Val Leu Thr Lys Val Ser Ala Ser Thr Val
                   195             200             205
25

       Pro Thr Asp Gly Ser Ser Arg Asn Glu Glu Thr Pro Ala Ala Pro Thr
           210             215             220

30
       Pro Ala Gly Ala Thr Gly Gly Ser Ser Ala Trp Leu Asp Ser Ser Phe
           225             230             235             240

35     Glu Asn Arg Gly Leu Gly Ser Glu Leu Ser Lys Pro Gly Val Leu Ala
                       245             250             255

       Ser Gln Val Asp Ser Pro Phe Ser Gly Cys Phe Glu Asp Leu Ala Ile
40                 260             265             270

       Ser Ala Ser Thr Ser Leu Gly Met Gly Pro Cys His Gly Pro Glu Glu
               275             280             285
45

       Asn Glu Tyr Lys Ser Glu Gly Thr Phe Gly Ile His Val Ala Glu Asn
           290             295             300

50
       Pro Ser Ile Gln Leu Leu Glu Gly Asn Pro Gly Pro Pro Ala Asp Pro
       305             310             315             320

55     Asp Gly Gly Pro Arg Pro Gln Ala Asp Arg Lys Phe Gln Glu Arg Glu
                       325             330             335

       Val Pro Cys His Arg
60                 340
```

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```
    <210>  14

    <211>  337

5   <212>  PRT

    <213>  artificial sequence


10
    <220>

    <223>  Fragment

15  <400>  14

    Asn Pro Asp Gly Gly Pro Leu Glu Ser Ser Ser Asp Leu Ala Ala Leu
    1               5               10                  15

20
    Ser Pro Leu Thr Ser Ser Gly His Gln Glu Lys Asp Thr Glu Leu Gly
                20              25                  30


25  Ser Thr His Thr Ala Gly Ala Thr Ser Ser Leu Thr Pro Ser Arg Gly
                35              40                  45


    Pro Val Ser Pro Ser Val Ser Phe Gln Pro Leu Ala Arg Ser Thr Pro
30      50              55                  60


    Arg Ala Ser Arg Leu Pro Gly Pro Thr Gly Ser Val Val Ser Thr Gly
    65              70              75                  80
35

    Thr Ser Phe Ser Ser Ser Ser Pro Gly Leu Ala Ser Ala Gly Ala Ala
                85              90                  95

40
    Glu Gly Lys Gln Gly Ala Glu Ser Asp Gln Ala Pro Ile Ile Cys Ser
                100             105                 110


45  Ser Gly Ala Glu Ala Pro Ala Asn Ser Leu Pro Ser Lys Val Pro Thr
                115             120                 125


    Thr Leu Met Pro Val Asn Thr Val Ala Leu Lys Val Pro Ala Asn Pro
50      130             135                 140


    Ala Ser Val Ser Thr Val Pro Ser Lys Leu Pro Thr Ser Ser Lys Pro
    145             150             155                 160
55

    Pro Gly Ala Val Pro Asn Ala Leu Thr Asn Pro Ala Pro Ser Lys Leu
                165             170                 175

60
    Pro Ile Asn Ser Thr Arg Ala Gly Met Val Pro Ser Lys Val Pro Thr
                180             185                 190
```

```
       Ser Met Val Leu Thr Lys Val Ser Ala Ser Thr Val Pro Thr Asp Gly
           195                 200             205

       Ser Ser Arg Asn Glu Glu Thr Pro Ala Ala Pro Thr Pro Ala Gly Ala
           210                 215             220

       Thr Gly Gly Ser Ser Ala Trp Leu Asp Ser Ser Phe Glu Asn Arg Gly
       225                 230             235                 240

       Leu Gly Ser Glu Leu Ser Lys Pro Gly Val Leu Ala Ser Gln Val Asp
                           245             250             255

       Ser Pro Phe Ser Gly Cys Phe Glu Asp Leu Ala Ile Ser Ala Ser Thr
                       260             265             270

       Ser Leu Gly Met Gly Pro Cys His Gly Pro Glu Glu Asn Glu Tyr Lys
               275             280             285

       Ser Glu Gly Thr Phe Gly Ile His Val Ala Glu Asn Pro Ser Ile Gln
           290             295             300

       Leu Leu Glu Gly Asn Pro Gly Pro Pro Ala Asp Pro Asp Gly Gly Pro
       305             310             315                 320

       Arg Pro Gln Ala Asp Arg Lys Phe Gln Glu Arg Glu Val Pro Cys His
                       325             330             335

       Arg
```

<210> 15

<211> 276

<212> PRT

<213> artificial sequence

<220>

<223> Fragment

<400> 15

```
       Ser Thr Pro Arg Ala Ser Arg Leu Pro Gly Pro Thr Gly Ser Val Val
       1               5               10              15

       Ser Thr Gly Thr Ser Phe Ser Ser Ser Ser Pro Gly Leu Ala Ser Ala
                   20              25              30
```

```
      Gly Ala Ala Glu Gly Lys Gln Gly Ala Glu Ser Asp Gln Ala Pro Ile
          35              40              45
 5

      Ile Cys Ser Ser Gly Ala Glu Ala Pro Ala Asn Ser Leu Pro Ser Lys
          50              55              60
10

      Val Pro Thr Thr Leu Met Pro Val Asn Thr Val Ala Leu Lys Val Pro
      65              70              75              80

15    Ala Asn Pro Ala Ser Val Ser Thr Val Pro Ser Lys Leu Pro Thr Ser
                      85              90              95

      Ser Lys Pro Pro Gly Ala Val Pro Asn Ala Leu Thr Asn Pro Ala Pro
20                100             105             110

      Ser Lys Leu Pro Ile Asn Ser Thr Arg Ala Gly Met Val Pro Ser Lys
          115             120             125
25

      Val Pro Thr Ser Met Val Leu Thr Lys Val Ser Ala Ser Thr Val Pro
          130             135             140

30    Thr Asp Gly Ser Ser Arg Asn Glu Glu Thr Pro Ala Ala Pro Thr Pro
          145             150             155             160

35    Ala Gly Ala Thr Gly Gly Ser Ser Ala Trp Leu Asp Ser Ser Phe Glu
                  165             170             175

      Asn Arg Gly Leu Gly Ser Glu Leu Ser Lys Pro Gly Val Leu Ala Ser
40                180             185             190

      Gln Val Asp Ser Pro Phe Ser Gly Cys Phe Glu Asp Leu Ala Ile Ser
          195             200             205
45

      Ala Ser Thr Ser Leu Gly Met Gly Pro Cys His Gly Pro Glu Glu Asn
          210             215             220
50

      Glu Tyr Lys Ser Glu Gly Thr Phe Gly Ile His Val Ala Glu Asn Pro
      225             230             235             240

55    Ser Ile Gln Leu Leu Glu Gly Asn Pro Gly Pro Pro Ala Asp Pro Asp
                  245             250             255

      Gly Gly Pro Arg Pro Gln Ala Asp Arg Lys Phe Gln Glu Arg Glu Val
60                260             265             270

      Pro Cys His Arg
```

275

<210> 16

<211> 272

<212> PRT

<213> artificial sequence

<220>

<223> Fragment

<400> 16

Ala Ser Arg Leu Pro Gly Pro Thr Gly Ser Val Val Ser Thr Gly Thr
1   5   10   15

Ser Phe Ser Ser Ser Ser Pro Gly Leu Ala Ser Ala Gly Ala Ala Glu
            20   25   30

Gly Lys Gln Gly Ala Glu Ser Asp Gln Ala Pro Ile Ile Cys Ser Ser
        35   40   45

Gly Ala Glu Ala Pro Ala Asn Ser Leu Pro Ser Lys Val Pro Thr Thr
    50   55   60

Leu Met Pro Val Asn Thr Val Ala Leu Lys Val Pro Ala Asn Pro Ala
65   70   75   80

Ser Val Ser Thr Val Pro Ser Lys Leu Pro Thr Ser Ser Lys Pro Pro
                85   90   95

Gly Ala Val Pro Asn Ala Leu Thr Asn Pro Ala Pro Ser Lys Leu Pro
            100   105   110

Ile Asn Ser Thr Arg Ala Gly Met Val Pro Ser Lys Val Pro Thr Ser
        115   120   125

Met Val Leu Thr Lys Val Ser Ala Ser Thr Val Pro Thr Asp Gly Ser
    130   135   140

Ser Arg Asn Glu Glu Thr Pro Ala Ala Pro Thr Pro Ala Gly Ala Thr
145   150   155   160

Gly Gly Ser Ser Ala Trp Leu Asp Ser Ser Phe Glu Asn Arg Gly Leu
                165   170   175

```
       Gly Ser Glu Leu Ser Lys Pro Gly Val Leu Ala Ser Gln Val Asp Ser
                   180                 185             190

  5    Pro Phe Ser Gly Cys Phe Glu Asp Leu Ala Ile Ser Ala Ser Thr Ser
                   195             200             205

 10    Leu Gly Met Gly Pro Cys His Gly Pro Glu Glu Asn Glu Tyr Lys Ser
           210             215             220

       Glu Gly Thr Phe Gly Ile His Val Ala Glu Asn Pro Ser Ile Gln Leu
       225             230             235             240
 15

       Leu Glu Gly Asn Pro Gly Pro Pro Ala Asp Pro Asp Gly Gly Pro Arg
                   245             250             255

 20
       Pro Gln Ala Asp Arg Lys Phe Gln Glu Arg Glu Val Pro Cys His Arg
                   260             265             270


 25    <210>  17

       <211>  269

       <212>  PRT
 30
       <213>  Artificial Sequence


 35    <220>

       <223>  Fragment

       <400>  17
 40
       Leu Pro Gly Pro Thr Gly Ser Val Val Ser Thr Gly Thr Ser Phe Ser
       1               5               10              15

 45    Ser Ser Ser Pro Gly Leu Ala Ser Ala Gly Ala Ala Glu Gly Lys Gln
                   20              25              30

       Gly Ala Glu Ser Asp Gln Ala Pro Ile Ile Cys Ser Ser Gly Ala Glu
                   35              40              45
 50

       Ala Pro Ala Asn Ser Leu Pro Ser Lys Val Pro Thr Thr Leu Met Pro
           50              55              60
 55

       Val Asn Thr Val Ala Leu Lys Val Pro Ala Asn Pro Ala Ser Val Ser
       65              70              75              80

 60
       Thr Val Pro Ser Lys Leu Pro Thr Ser Ser Lys Pro Pro Gly Ala Val
                   85              90              95
```

```
          Pro Asn Ala Leu Thr Asn Pro Ala Pro Ser Lys Leu Pro Ile Asn Ser
                      100             105             110

          Thr Arg Ala Gly Met Val Pro Ser Lys Val Pro Thr Ser Met Val Leu
                      115             120             125

          Thr Lys Val Ser Ala Ser Thr Val Pro Thr Asp Gly Ser Ser Arg Asn
                  130             135             140

          Glu Glu Thr Pro Ala Ala Pro Thr Pro Ala Gly Ala Thr Gly Gly Ser
          145             150             155             160

          Ser Ala Trp Leu Asp Ser Ser Phe Glu Asn Arg Gly Leu Gly Ser Glu
                          165             170             175

          Leu Ser Lys Pro Gly Val Leu Ala Ser Gln Val Asp Ser Pro Phe Ser
                      180             185             190

          Gly Cys Phe Glu Asp Leu Ala Ile Ser Ala Ser Thr Ser Leu Gly Met
                  195             200             205

          Gly Pro Cys His Gly Pro Glu Glu Asn Glu Tyr Lys Ser Glu Gly Thr
              210             215             220

          Phe Gly Ile His Val Ala Glu Asn Pro Ser Ile Gln Leu Leu Glu Gly
          225             230             235             240

          Asn Pro Gly Pro Pro Ala Asp Pro Asp Gly Gly Pro Arg Pro Gln Ala
                      245             250             255

          Asp Arg Lys Phe Gln Glu Arg Glu Val Pro Cys His Arg
                      260             265
```

<210> 18

<211> 510

<212> PRT

<213> Artificial Sequence

<220>

<223> Fragment

<400> 18

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          Met Pro Phe Ala Glu Asp Lys Thr Tyr Lys Tyr Ile Cys Arg Asn Phe
          1               5               10              15
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- 30 -

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        Ser Asn Phe Cys Asn Val Asp Val Val Glu Ile Leu Pro Tyr Leu Pro
                    20              25                  30
 5

        Cys Leu Thr Ala Arg Asp Gln Asp Arg Leu Arg Ala Thr Cys Thr Leu
                    35              40                  45
10

        Ser Gly Asn Arg Asp Thr Leu Trp His Leu Phe Asn Thr Leu Gln Arg
            50                  55              60
15
        Arg Pro Gly Trp Val Glu Tyr Phe Ile Ala Ala Leu Arg Gly Cys Glu
            65                  70              75              80

        Leu Val Asp Leu Ala Asp Glu Val Ala Ser Val Tyr Glu Ser Tyr Gln
20                      85              90                  95

        Pro Arg Thr Ser Asp Arg Pro Pro Asp Pro Leu Glu Pro Pro Ser Leu
                    100             105                 110
25
        Pro Ala Glu Arg Pro Gly Pro Pro Thr Pro Ala Ala Ala His Ser Ile
                    115             120                 125

30
        Pro Tyr Asn Ser Cys Arg Glu Lys Glu Pro Ser Tyr Pro Met Pro Val
            130                 135             140

35      Gln Glu Thr Gln Ala Pro Glu Ser Pro Gly Glu Asn Ser Glu Gln Ala
        145                 150             155                 160

        Leu Gln Thr Leu Ser Pro Arg Ala Ile Pro Arg Asn Pro Asp Gly Gly
40                      165             170                 175

        Pro Leu Glu Ser Ser Ser Asp Leu Ala Ala Leu Ser Pro Leu Thr Ser
                    180             185                 190
45
        Ser Gly His Gln Glu Lys Asp Thr Glu Leu Gly Ser Thr His Thr Ala
                    195             200                 205

50
        Gly Ala Thr Ser Ser Leu Thr Pro Ser Arg Gly Pro Val Ser Pro Ser
            210                 215             220

55      Val Ser Phe Gln Pro Leu Ala Arg Ser Thr Pro Arg Ala Ser Arg Leu
        225                 230             235                 240

        Pro Gly Pro Thr Gly Ser Val Val Ser Thr Gly Thr Ser Phe Ser Ser
60                      245             250                 255

        Ser Ser Pro Gly Leu Ala Ser Ala Gly Ala Ala Glu Gly Lys Gln Gly
```

```
                    260                    265                    270

   5   Ala Glu Ser Asp Gln Ala Glu Pro Ile Ile Cys Ser Ser Gly Ala Glu
           275                 280                 285

  10   Ala Pro Ala Asn Ser Leu Pro Ser Lys Val Pro Thr Thr Leu Met Pro
           290                 295                 300

  15   Val Asn Thr Val Ala Leu Lys Val Pro Ala Asn Pro Ala Ser Val Ser
       305                 310                 315                 320

  20   Thr Val Pro Ser Lys Leu Pro Thr Ser Ser Lys Pro Pro Gly Ala Val
                     325                 330                 335

  25   Pro Ser Asn Ala Leu Thr Asn Pro Ala Pro Ser Lys Leu Pro Ile Asn
                 340                 345                 350

  30   Ser Thr Arg Ala Gly Met Val Pro Ser Lys Val Pro Thr Ser Met Val
             355                 360                 365

       Leu Thr Lys Val Ser Ala Ser Thr Val Pro Thr Asp Gly Ser Ser Arg
           370                 375                 380

  35   Asn Glu Glu Thr Pro Ala Ala Pro Thr Pro Ala Gly Ala Thr Gly Gly
       385                 390                 395                 400

  40   Ser Ser Ala Trp Leu Asp Ser Ser Phe Glu Asn Arg Gly Leu Gly Ser
                     405                 410                 415

       Glu Leu Ser Lys Pro Gly Val Leu Ala Ser Gln Val Asp Ser Pro Phe
                 420                 425                 430

  45   Ser Gly Cys Phe Glu Asp Leu Ala Ile Ser Ala Ser Thr Ser Leu Gly
             435                 440                 445

  50   Met Gly Pro Cys His Gly Pro Glu Glu Asn Glu Tyr Lys Ser Glu Gly
           450                 455                 460

       Thr Phe Gly Ile His Val Ala Glu Asn Pro Ser Ile Gln Leu Leu Glu
       465                 470                 475                 480

  55   Gly Asn Pro Gly Pro Pro Ala Asp Pro Asp Gly Gly Pro Arg Pro Gln
                     485                 490                 495

  60   Ala Asp Arg Lys Phe Gln Glu Arg Glu Val Pro Cys His Arg
                 500                 505                 510
```

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<210>  19

<211>  20

<212>  DNA

<213>  artificial sequence


<220>

<223>  Primer Rantes sense

<400>  19
cgctgtcatc ctcattgcta                                                          20


<210>  20

<211>  20

<212>  DNA

<213>  artificial sequence


<220>

<223>  Primer Rantes antisense

<400>  20
gcacttgcca ctggtgtaga                                                          20


<210>  21

<211>  20

<212>  DNA

<213>  artificial sequence


<220>

<223>  Primer IL-8 sense

<400>  21
ctgcgccaac acagaaatta                                                          20


<210>  22

<211>  20

<212>  DNA

<213>  artificial sequence
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        <220>

 5      <223>   Primer IL-8 antisense

        <400>   22
        tgaattctca gccctcttca                                         20

10
        <210>   23

        <211>   21

15      <212>   PRT

        <213>   artificial sequence


20
        <220>

        <223>   Peptide for immunization

25      <400>   23

        Pro Met Pro Val Gln Glu Thr Gln Ala Pro Glu Ser Pro Gly Glu Asn
        1               5                   10                  15

30
        Ser Glu Gln Ala Leu
                        20


35      <210>   24

        <211>   15

        <212>   PRT
40
        <213>   artificial sequence


45      <220>

        <223>   Peptide for immunozation

        <400>   24
50
        Pro Ala Asp Pro Asp Gly Gly Pro Arg Pro Gln Ala Asp Arg Lys
        1               5                   10                  15


55      <210>   25

        <211>   12

        <212>   PRT
60
        <213>   artificial sequence
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        <220>

  5     <223>  Peptide for immunozation

        <400>  25

        Ser Lys Leu Pro Ile Asn Ser Thr Arg Ala Gly Met
 10     1               5                   10


        <210>  26
 15     <211>  7

        <212>  PRT

        <213>  artificial sequence
 20


        <220>

 25     <223>  peptide pWobble

        <220>

        <221>  MISC_FEATURE
 30
        <222>  (1)..(5)

        <223>  Xaa = Leu or Val

 35

        <400>  26

        Xaa Pro Ser Lys Xaa Pro Thr
 40     1               5


        <210>  27

 45     <211>  7

        <212>  PRT

        <213>  artificial sequence
 50


        <220>

 55     <223>  Peptide p3061

        <400>  27

        Leu Pro Ser Lys Leu Pro Thr
 60     1               5
```

```
<210>   28

<211>   7

<212>   PRT

<213>   artificial sequence


<220>

<223>   SEP fragment I

<400>   28

Leu Pro Ser Lys Leu Pro Thr
1               5


<210>   29

<211>   7

<212>   PRT

<213>   artificial sequence


<220>

<223>   SEP fragment II

<400>   29

Leu Pro Ser Lys Val Pro Thr
1               5


<210>   30

<211>   7

<212>   PRT

<213>   artificial sequence


<220>

<223>   SEP fragment III

<400>   30

Val Pro Ser Lys Leu Pro Thr
1               5


<210>   31
```

<211> 7

<212> PRT

5   <213> artificial sequence

<220>
10
<223> SEP fragment IV

<400> 31

15 Val Pro Ser Lys Val Pro Thr
    1   5